

TOBACCO INDUSTRY RESEARCH COMMITTEE

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150 E. 42nd Street New York 17, N.Y.

Application for Research Grant

#235

(Cf. #72  
Activated 7/1/55  
Renewed 7/1/56  
#157  
Activated 7/1/57  
Renewed 7/1/58)

May 8, 1959

1. Name of Investigator: R. H. Rigdon, M.D.
2. Title: Professor of Pathology
3. Institution & Address: The University of Texas Medical Branch  
Galveston, Texas
4. Project or Subject: Study of the Effect of Tobacco Tar on the White  
Pekin Duck.
5. Detailed Plan of Procedure:

In the study of the effect of tobacco tar on the respiratory tract of white Pekin ducks we gave nine ducks tobacco tar intratracheally in mineral oil for 130 times and observed amyloid in the liver of three. One of these birds died on the 242nd day after the first intratracheal injection and two were sacrificed on the 756th day.

I think this experiment should be repeated. We used 1 milliliter of cigarette tar and 19 milliliters of liquid petrolatum. When larger amounts of tar are given, the ducks show clinical evidence of nicotine poisoning. It would be wise to give this tobacco tar orally to some ducks to see if amyloidosis results. I say this because we have produced amyloidosis in ducks given methylcholanthrene orally.

Ducks given the tobacco tar will be sacrificed at varying intervals and histologic studies of the viscera will be made.

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|-----------------|---------------------|------------|
| 6. Budget Plan: | Salaries            | \$3105.00* |
|                 | Expendable Supplies | 1200.00    |
|                 | Permanent Equipment |            |
|                 | Overhead (10%)      | 460.00     |
|                 | Other               | 300.00     |
|                 | Total               | \$5065.00  |

\* This includes \$82.50 O/A/S/I. and \$22.50 W.C.I.

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7. Anticipated Duration of Work:

Two years

8. Facilities and Staff Available:

The same facilities we have had during the past several years.

9. Additional Requirements:

None

10. Additional Information (Including relation of work to other projects and other sources of supply):

Amyloid was first observed in 1955 in ducks treated with methylcholanthrene (R.H. Rigdon, Atypical cirrhosis in the duck produced by methylcholanthrene. Am. J. Path. 31:451-473, 1955). We recently have observed amyloid in the liver, spleen, adrenals, kidneys and thyroid of ducks given one large intratracheal injection of methylcholanthrene. This study was reported at Duke University in March of 1959. The manuscript is now ready to submit for publication.

Additional information on amyloidosis referable to pathogenesis would be valuable. Since it can be produced in ducks with methylcholanthrene and there is evidence that it will follow intratracheal injections of tobacco tar, we should establish the latter as a scientific fact. At the present time we know that large amounts of methylcholanthrene, when put into the respiratory tract, will produce neoplasms. Tobacco tar has not produced any tumors, but amyloidosis has occurred. Additional studies on tobacco tar and the production of amyloidosis may contribute to the basic knowledge of the agents that are carcinogenic.

Articles either published or recently submitted and aided by a grant from the Tobacco Industry Research Committee:

1. Keratoacanthoma. Experimentally induced with methylcholanthrene in the chicken. Arch. Dermat. 79: 139-147, 1959.
2. Mechanism of removal of fluid and particulate material from the respiratory tract of the duck. Arch. Path. 67:215-227, 1959.
3. Cancer of the lung - the sex ratio. A review of the problem. Texas Reports Biol. and Med. 17:29-48, 1958.
4. The respiratory system in the normal white Pekin duck. Poultry Sci. 38: 196-210, 1959.
5. The effect of tobacco tar on the respiratory tract of white Pekin ducks. Arch. Path. Submitted for consideration March 3, 1959.
6. Effects of methylcholanthrene on the respiratory tract of the white Pekin duck. Arch. Path. Submitted for consideration March 3, 1959.

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